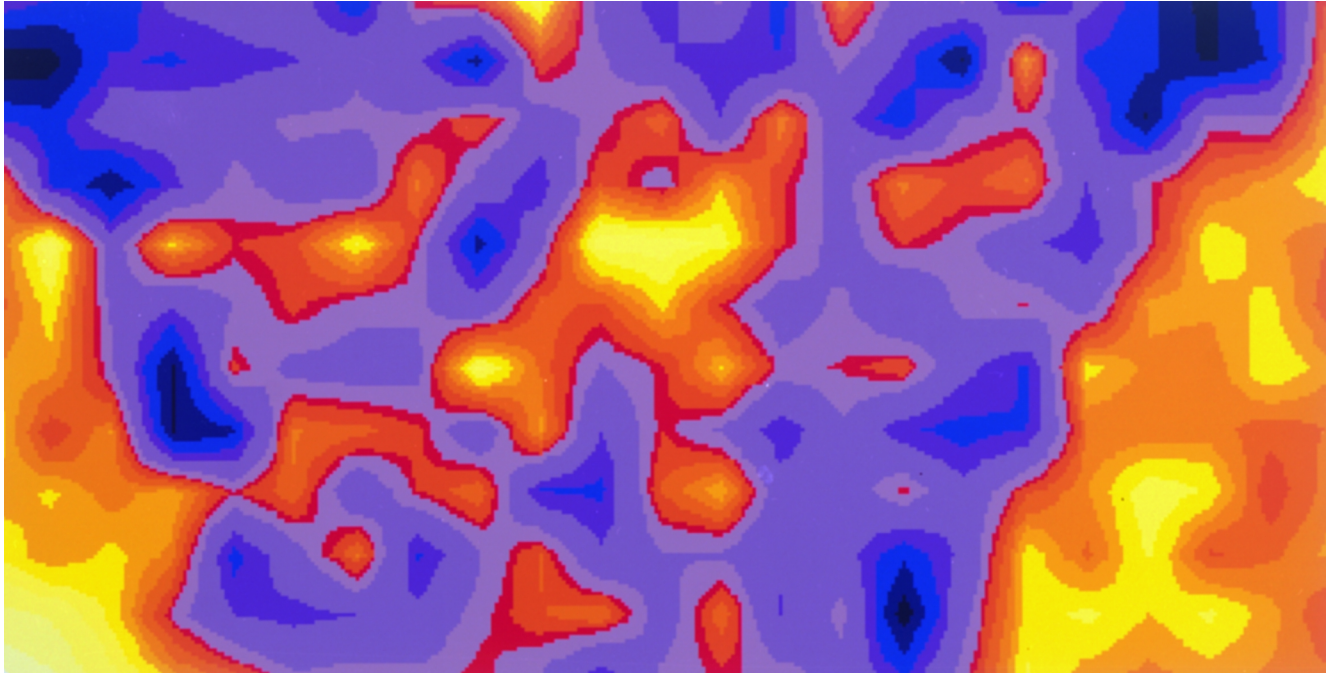


WELDING ADVANCED NAVY STEELS



Microhardness map taken from the transverse cross section of a gas metal arc weldment of an advanced High-Strength Low-Alloy steel

The Navy desires plate steel for ship and submarine construction with higher yield strengths, no loss of toughness, and reduced processing costs. Advanced High-Strength Low-Alloy (HSLA) steels (which also have commercial applications in the construction of buildings, bridges, pipelines, and ships) have the potential to meet these criteria. Some costly welding problems, however, are still a major source of concern. These include welding-induced distortion and cracking within weldments. The Naval Research Laboratory's (NRL) advanced steels welding program provides processing-microstructure-properties correlations and theoretical modeling that enhance our ability to control the microstructure and the mechanical properties of welded HSLA steels.

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